CC-688 Car Sharing T-Box Installation Guide-202008

Products & Parts:

CC-688 Main control unit

Touch Key Pad (Optional)

Push Start Button(Optional)

OBD Wires

2/3/4G & GPS Antenna

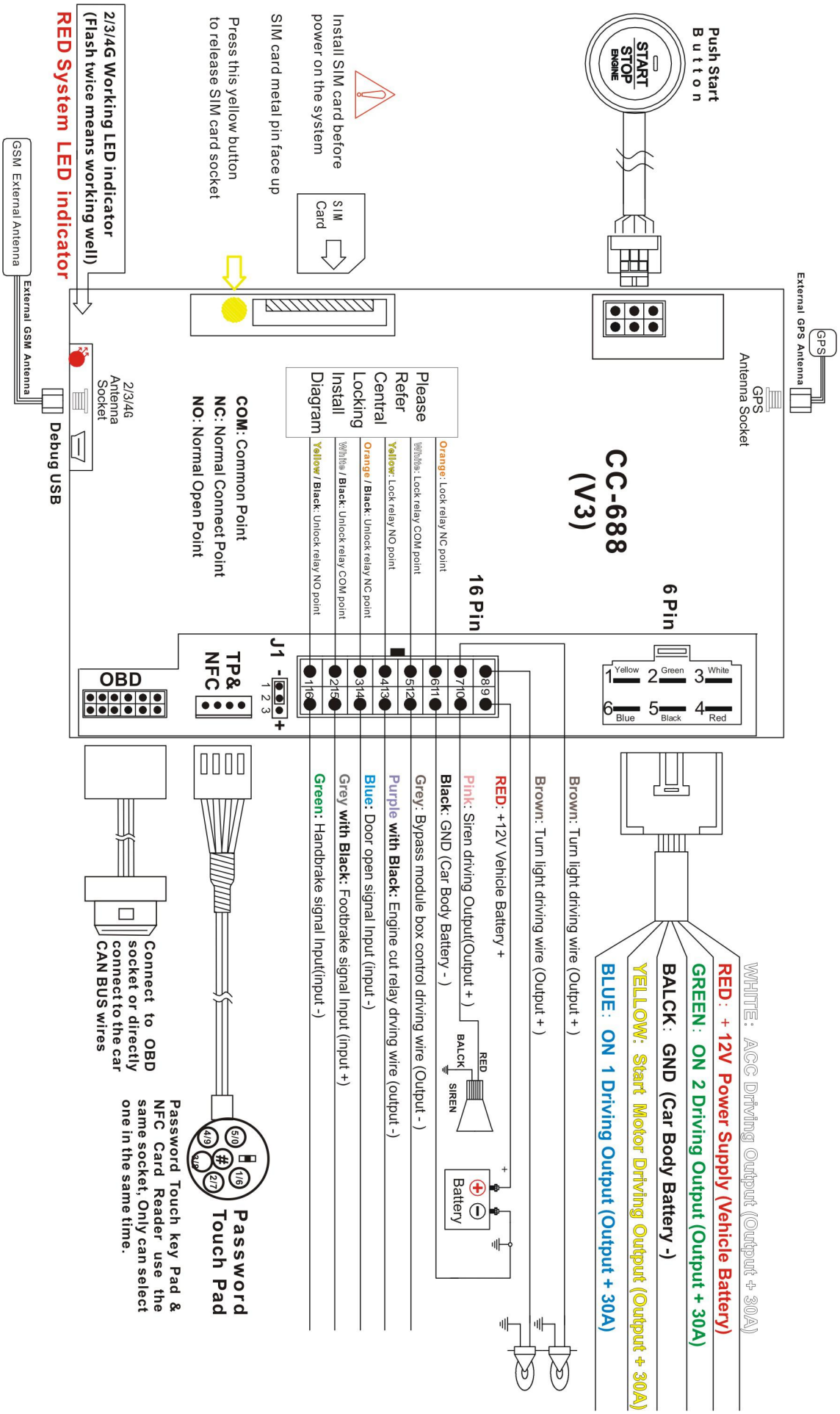
Wires

Siren (Optional)

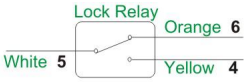
Car Key Bypass Module (Optional)

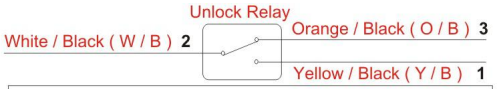
NFC Card Reader (Optional)

Installation Diagram

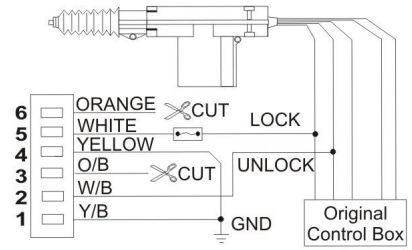


Central Lock Wire Connection Guide

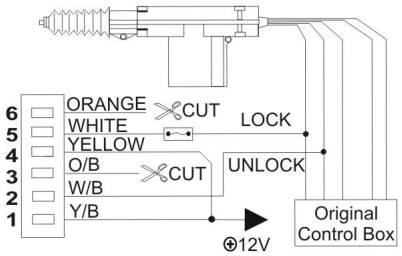




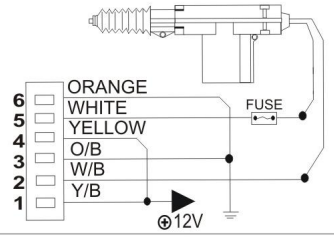
A: If the car have original lock system, check the trigger signal is positive or negative, if lock unlock is triggered by Negative, install as follow:



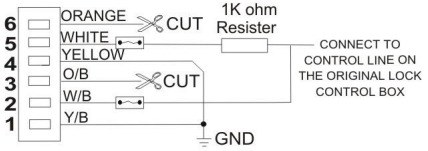
B: If the car have original lock system, check the trigger signal is positive or negative, if lock unlock is triggered by Positive, install as follow:



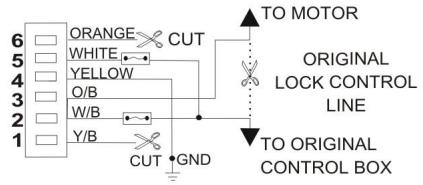
C: If the car have not the original central lock system or the car only have 3 door lock, install a 2 wires lock or a full set central lock system. single 2 wires lock connect as follow, most after market full set central lock is negative trigger, refer diagram A.



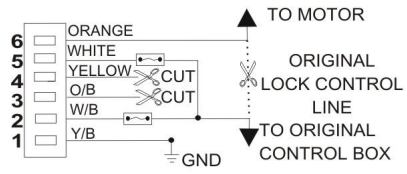
D: Dual voltage single wire trigger, use the multi-meter to check the control wire on the original lock control box, lock and unlock is controlled by one wire, Lock Unlock signal are 2 difference level voltage pulse signal, unlock signal is GND directly , and lock signal is 4-8V pulse, add a 1K ohm resister in the control wire can output 2 level signal,connect as follow. For example: Volkswagen Polo、Bora、Passat.



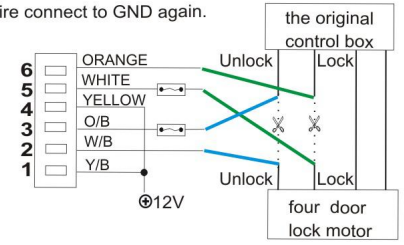
E: One wire negative trigger, check use multi-meter, when lock the door the control wire is connect to GND, when unlock the control wire is opened. For Example: Volkswagen Jetta etc.



F: One wire negative trigger, check use multi-meter, when unlock the door the control wire is connect to GND, when lock the control wire is opened.

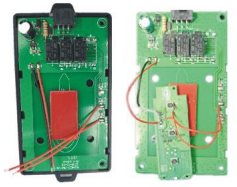


G: Positive Pulse Trigger, use the multi-meter to check the control wire on the original lock control box, the control wire normally is GND, lock & unlock trigger signal is positive pulse, after lock unlock the control wire connect to GND again.



H: Original Remoter Control Lock Unlock, if the original car lock unlock control wire is not easy to find or it is controlled by internal CAN BUS, use Bypass Box can control the original remoter key button to lock unlock door, almost all cars with original remoter can use.

T-Box use negative triggered to control bypass box, Please refer the Diagram A.



Red wire (Left): 3V connect to remoter power

Black:GND
Connect to remoter GND

2 RED wires (Right) one is lock output, another is unlock output, soldering to remoter lock unlock button input.

Wire Harness Description

16Pin Wire Harness

No	Color	Wire Name	Wire Function
1	Yellow/narrow Black	UNLOCK relay normal open Point	Please refer central lock installing diagram
2	White/narrow Black	UNLOCK relay common output Point	Please refer central lock installing diagram
3	Orange/narrow Black	UNLOCK relay normal connect Point	Please refer central lock installing diagram
4	Yellow	LOCK relay normal open Point	Please refer central lock installing diagram
5	White	LOCK relay output Point	Please refer central lock installing diagram
6	Orange	LOCK relay normal connect Point	Please refer central lock installing diagram
7	Brown	Turn light driving wire (output +)	Driving turn light to flash, output +12V, <10A
8	Brown	Turn light driving wire (output +)	Driving turn light to flash, output +12V, <10A
9	Red	12V power supply +	Connect car battery +
10	Pink	Siren driving wire (Default Output +, can change to output -)	Driving siren wire, output +12V, <10A. (Soldering J20 together & disconnect J21 On PCB board can change output to - Negative)
11	Black	GND car body	Connect car battery - or car body
12	Grey	BYPASS box control wire (output -)	<500mA, output - after unlock.
13	Purple/narrow Black	Immobilizer control wire (output -)	Immobilizer or starter cut relay control wire, <500mA, output - after lock
14	Blue	Door Open Signal (Trigger by -, can change to + by change the J1 selector)	Pull out J1 selector from Pin 1 and 2, push the selector to pin 2 and 3, the door open signal triggered will change to + triggered.
15	Grey/narrow Black	FOOTBRAKE input wire (Trigger by +)	This signal used with engine start stop button together.
16	Green	Hand brake input wire (Trigger by -)	App remote start engine need pull handbrake , it i triggered by - .

6 Pin Wire Harness

No	Color	Wire Name	Wire Function
1	YELLOW	Start Motor Output	Start motor driving output wire, output + , <30A
2	GREEN	ON Output 2	ON output 2 driving wire, output + , <30A
3	WHITE	ACC Output	ACC output driving wire, output + , 30A
4	RED	12V	The main 12V power supply wire, connect to car battery 12V.
5	BLACK	GND	The main GND wire, normally connect to car body.
6	BLUE	ON Output 1	ON output 1 driving wire, output + , <30A

LED Indicator: (Flash Cycle Time: 4 seconds)

- RED LED ON continuously : T-Box searching 2/3/4G network;
- RED LED OFF continuously : T-Box power off;
- RED LED Flash once : Internet OK, GPS OK;
- RED LED Flash twice : Internet OK, No GPS Signal;
- RED LED Flash 3 times : No Internet, GPS OK; (APN or Server Error)
- RED LED Flash 4 times : No Internet, No GPS Signal; (APN or Server Error);

Power ON / OFF

Power ON: Install SIM card, connect the 2/3/4G & GPS antenna to T-Box, and then connect the VCC and GND wire on 16Pin wire harness to 12V car battery or DC power supply, the T-Box will power on.

Power OFF: Disconnect the 16 Pin & 6 Pin wire harness from the T-Box, if no backup battery built in , the T-Box will power off immediately, if there is backup battery built in the T-Box, then the T-Box will send power down alarm information to server, and keep online until the battery is gone out, the battery can last about 0.5 to 1 hour depend on the battery capacity.

Wiring Guide for Adding Push Start Button Installation:

(Original car use mechanical car key to start engine)

1. 6P wire harness all need to be connected, Yellow (Motor driving wire), Green & Blue (ON driving wire), White (ACC driving wire), every wire output capacity is 30A.
2. Push start button need to be installed.

3. 2/3/4G antenna & GPS antenna need to be installed, and the antenna should not be folded with 90 degree, and the GPS antenna should face to sky.

4. The Password Touch Pad & NFC Card Reader only can select 1 in the same time, if the NFC card reader is used, the T-Box main firmware should be upgrade, the Password Touch Pad & NFC Card Reader installation please refer the installation guide of Password Touch Pad & NFC Card Reader.

5. OBD can bus wire connection: Use OBD external wire to connect T-Box and original car OBD socket.

The following is 16P wire harness installation:

6. 9 Red power supply & 11 Black GND car body wire must to be connected firmly.

7. 16 Green: Hand Brake wire, - Negative triggered, before app remote start engine, the hand brake should be pulled up, if the app remote start engine function is not necessary, then this wire is not necessary to install.

8. 15 Grey with narrow Black: Foot Brake input, + passive triggered, before push start button to start engine, the foot brake should be pressed. if the push start button is not installed, then this wire is not necessary to install.

9. 14 Blue: Door open signal input, default is - Negative triggered, + positive triggered also can be selected (Pull out the J1 selector from Pin 1 & 2, push the selector to Pin 2 & 3). If this wire is not connected, the car control function is normal, only door open information can not upload to the server.

10. 13 Purple with narrow Black: Immobilizer Cut Relay control output, output - , 500mA driving capacity, if the bypass box is installed, the immobilizer or cut relay is not necessary to install, because after the car is locked, the RFID key can not be detected, so the engine can not be started, if the original car has not original RFID security system or the bypass box is not installed, then a cut relay is necessary to install to disable the engine start after lock the door. Also if user like to turn off specially car control module (for example: Oil pump, battery, or power supply for a certain module), a external cut relay can be installed. this wire need add a relay to control the big current power supply.

11. 12 Grey: Bypass box control output, Now most of cars have original RFID chip car security system, the bypass box must be installed to disable or enable the original RFID security system, this Grey wire is connected to the bypass box Grey control wire, the detail installation guide please refer the bypass box installation guide.

The following wire need be connected or not depend on the OBD can bus can control car or not, OBD can bus control car (lock / unlock / beep siren / flash light) need T-Box upgrade the main firmware, there is not a general version can control all model cars, because the OBD

can bus control command are private protocol for every brand, so different brand and different year model car OBD control command need be test one by one, the general version software T-Box can not control car by OBD can bus, only can read basic OBD information (For example: battery voltage, Speed, DTC code etc.).

12. 10 Pink: Beep Siren alarm output, default output +12V, <10A. also this output can drive original car horn, the original car horn mostly is - negative triggered, open the T-Box case, soldering J20 together & disconnect J21 On PCB board can change output to - Negative. If the OBD can bus can control beep the original horn, then this wire is not necessary to install.

13. 7 & 8 Brown: turn light driving output, output +12V, each 10A driving capacity, can drive original car turn light, used for flashing light finding car & lock unlock indicator. If the OBD can bus can control beep the original horn, then this wire is not necessary to install.

14. 1-6: Central lock driving wire, 10A driving capacity, the output can be changed positive and negative through the wiring combination. If the central control lock wire is difficult to find or connect, the bypass key box can be used to control the original car remoter button to switch the door lock unlock. When the bypass box is used to drive the original car remoter to control lock unlock, this 1 - 6 wires need be connected to a low level negative output (refer to central control lock wiring diagram A). For the detailed wiring installation of the bypass box to drive the original car remoter, please refer to the bypass box installation guide. If the OBD can bus can control lock unlock without wiring, then these 1-6 wires are not necessary to install.

15. SIM card installation and internet APN & username password please refer the following description.

Wiring Guide for Not Adding Push Start Button & without App Remote Start Engine Function Installation:

(Original car use Push Start System to start engine)

1. 6P wire harness **Blue Wire** **(ON 2)** need to be connected to ON signal, this wire have ON signal detection, Positive high level voltage triggered, if this wire is not installed, the T-Box can not upload car engine running information to server, the other function is normal. The other wires on 6P (RED / BALCK / YELLOW / GREEN / WHITE) are not necessary to install.

2. Push start button is not necessary to install.

3. 2/3/4G antenna & GPS antenna need to be installed, and the antenna should not be folded with 90

degree, and the GPS antenna should face to sky.

4. The Password Touch Pad & NFC Card Reader only can select 1 in the same time, if the NFC card reader is used, the T-Box main firmware should be upgrade, the Password Touch Pad & NFC Card Reader installation please refer the installation guide of Password Touch Pad & NFC Card Reader.

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horn, the original car horn mostly is - negative triggered, open the T-Box case, soldering J20 together & disconnect J21 On PCB board can change output to - Negative. If the OBD can bus can control beep the original horn, then this wire is not necessary to install.

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Wiring Guide for Not Adding Push Start Button & with App Remote Start Engine Function Installation:

(Original car use Push Start System to start engine)

1. 6P wire harness **Blue Wire** **(ON 2)** need to be connected to ON signal, this wire have ON signal detection, Positive high level voltage triggered, if this wire is not installed, the T-Box can not upload car engine running information to server, the other function is normal. RED / BALCK wire for power supply need to be connected. 6P **Yellow wire** will change to foot brake signal output wire, output + 12V, 30A driving capacity, 13 **Purple with narrow Black** wire (Immobilizer Cut Relay output) on 16P harness will change to driving original push start button signal, output - negative, 500mA driving capacity, connect it to original push start triggered wire (Mostly is negative pulse triggered, add a relay can change the negative pulse to positive pulse output), Green wire (ON1) and White wire (ACC) on 6P are not necessary to connect (this T-Box firmware need specially version to fit this remote start engine function, the detail please contact our sales or support).

2. Push start button is not necessary to install.

3. 2/3/4G antenna & GPS antenna need to be installed, and the antenna should not be folded with 90

degree, and the GPS antenna should face to sky.

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10. 13 Purple with narrow Black: connect to original push start button driving wire, see the above 1.

11. 12 Grey: Bypass box control output, Now most of cars have original RFID chip car security system, the bypass box must be installed to disable or enable the original RFID security system, this Grey wire is connected to the bypass box Grey control wire, the detail installation guide please refer the bypass box installation guide.

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15. SIM card installation and internet APN & username password please refer the following description.

Install SIM Card

First to buy a 4G LTE / 3G WCDMA / 2G GSM SIM card which have SMS service & internet data service, normally it need about 30M data per month according the different working mode, recommended order a internet data plan for the SIM card. (Note: Most M2M SIM Card have not voice & sms function, this kind of M2M SIM card can not use SMS control),Some SIM card need to send SMS or USSD command to enable the data service, the detail please see the SIM card manual or call the SIM card service hotline.

Behind the main control box, the SIM card holder can be seen, press the yellow switch button with a tool and then the holder will come out. Pull it out and put the SIM card in the holder and then push the holder into the T-Box again (Pay attention to that the SIM card metal contact pin can not face down to the holder)

Set Internet APN & User Name & Password

Before using, SIM card internet data service need be enabled fist, and internet visiting APN & internet username & password must be set, the APN and internet user name & password please call SIM card company to confirm.

Send SMS “APN*12345678*apnname” to the T-Box SIM card number, in which, “APN” is the fixed command, “12345678” is the password and “apnname” is the APN name of the SIM card in T-Box. Having successfully been made, there will be a SMS “APN: apnname”.

Send SMS “USERNAME*12345678*username*password” to the T-Box SIM card number, “USERNAME” is a command, “12345678” is the password of the tracker; “username” is the SIM card internet username, “password” is the the SIM card internet password, if the operation is success, the T-Box will send back the information “Username:username, Password:password”, if the password is not right, the operation is fault, the T-Box will send back information “Wrong Password”.

Set Server IP or Domain Name & Port

Send SMS “IP*12345678*IPorDomainname,port” to the T-Box SIM card number, in which, “IP” is the fixed command, “12345678” is the password and “IPorDomainname” is the IP address or domain name of the server. “port” is the port of the server that send or receive T-Box data. Having successfully been set, there will be a SMS “IP: 58.64.155.133,8011”.

SMS Check T-Box Setting CHECK*12345678

Send SMS “CHECK*12345678” to T-Box SIM card number, “CHECK” is the fixed command, “12345678” is T-Box device password. The T-Box will send back information including software version, ID S/N number, IP address, authorized phone number, GPS and GSM signal etc. if the password is not right, the operation is fault, the tracker will send back information “Wrong Password”. The following is an example:

C1 V Mar 3 2020, 18:16:24, 202001688988, ezgps1.igps.info, 112.35.48.48, 6666, 10, 100, 450, 600, 192, A:13987654321, +00, GPS OK, GPRS/WCDMA Ok, -95dBm, E_Bat_Level:11.35 V, I_Bat_Level:0.00 V, APN:CMNET,UAERNAME:, USERPWD:, MCCMNC:46000, SuperUser key:00000000,key:00000000

C1 V Mar 03 2020: PCB name & firmware version

202001688688: T-Box ID Number

ezgps1.igps.info: Server domain name or IP

112.35.48.48, 6666: Server IP and port

10: Uploading time interval when driving, unit is seconds

100: Shock triggered sensitivity, max is 255

450: Hash acceleration alarm threshold, max is 1024

600: Hard brake alarm threshold, max is 1024

192: Hard crash alarm threshold, max is 255

A:13987654321: Authorized phone number

+00: Time zone

GPS OK: GPS has been located (or NO GPS)

GPRS/WCDMA Ok: Network has been connected

-95dBm: Communication signal strength

E_Bat_Level: Car battery voltage

I_Bat_Level: Backup battery voltage

APN: Internet APN name

USERNAME: Internet Visiting Username

USERPWD: Internet Visiting Password

MCCMNC: SIM card MCCMNC code

SuperUser: Super password or super user NFC

Key: Car rent temporioly password or NFC

SMS Command List

SMS command also can control the T-Box, just sending a SMS to the T-Box is OK, the password is necessary for SMS command control, this password is saved in the device. The T-Box factory default password is 12345678. This password and web page It is not related to user passwords such as App and others. This password is only the password controlled by SMS command and can be modified by client.

Function	SMS Command	Reply
Lock	LOCK*12345678	LOCK OK
Unlock	UNLOCK*12345678	Unlock OK
Falshing Light find car	FLASHFINDING*12345678	Car is in arm/disarm
Siren find car	HORNFINDING*12345678	
Light+Siren find car	FINDINGCAR*12345678	
Start car engine	START*12345678	remote start success
Locate with map link	DW*12345678	Location map link
Disable engine start	STOPENGINE*12345678	cutrelay ok
Enable engine start	STARTENGINE*12345678	prerelay ok
Change T-Box password	CHANGEPASSWORD*12345678*11112222	Password:11112222
Set G alarm threshold	GSENSOR*12345678*50	SET G sensor OK
Set time interval	INTERVAL*12345678*xxx	Interval: xxx s
Set internet APN	APN*12345678*Apnname	APN:Apnnname
Set internet user name & password	USERNAME*12345678*username*password	Internet username:xx, Password:xx
Set server IP & port	IP*12345678*IPorDomainname,port	IP SET OK
Repower on T-Box	RESET*12345678	Reset OK
Back to factory setting	FACTORY*12345678	Factory OK
Check T-box setting	CHECK*12345678	Setting message
Set rent password	SETKEY*12345678*123321	set touchkey ok, keynumber xxxx
Set car owner password	SUPERUSER*12345678*112233	set superuser password ok,password xxxx
Change T-Box ID	CHANGEID*12345678*888123456123456	New ID:888123456123456
Upgrade firmware	UPGRADEMAIN*12345678*112.95.126.105,8011	Upgrade main or OBD starting !
Set rent NFC card	ADDNFCCARD*12345678***0***AAAABBBB	Add NFC card ok!
Set car owner NFC card	ADDNFCCARD*12345678***1***CCCCDDDD	Add NFC card ok!
Del rent NFC card	DELNFCCARD*12345678***0**	Del NFC card ok!
Del owner NFC card	DELNFCCARD*12345678***1**	Del NFC card ok!
Del all NFC card	DELNFCCARD*12345678***2**	Del NFC card ok!

Simply Using Step

1. First to buy a 2G GSM or 3G WCDMA or 4G LTE mobile phone SIM card, which needs SMS service and internet function.
2. Install the SIM card refer to the above description, connect the 2/3/4G & GPS antenna to T-Box, and then connect the VCC and GND wire on 16Pin wire harness to 12V car battery or DC power supply, the T-Box will power on.
3. Check the LED flashing to confirm the T-Box work well (Refer the above LED Flash Indicator). The

GPS antenna should be outdoor to receive the GPS signal.

4. Set APN and internet user name & password by sending SMS to the T-Box, if the APN & internet user name & password is not right, the T-Box can not upload the location to server, send SMS "CHECK*12345678" to T-Box can check the T-Box setting including APN setting (SMS command for APN & internet user name & password: "APN*12345678*apnname" and "USERNAME*12345678*username*password", the detail please refer the following SMS command list.
5. This T-Box uses the TCP / IP communication protocol to communicate with the server, For detailed communication protocol, please contact client manager to obtain it. If the private or 3rd platform will be used, the IP or domain name can be set by sending SMS. the detail please refer the following SMS command list and the TCP/IP protocol.
6. When T-Box power on, the T-Box will send identity authentication message (login request command) to platform server **0x0102**, the platform will reply the T-Box with **0x8102** message to allow the T-Box connect to the platform, every communication command and message between the T-Box and the server is accompanied by a serial number to avoid repeated execution of commands and receiving information. When the T-Box is triggered by shock sensor or the the car engine is running (car key stay in ON position) , the T-Box will upload **0x0200 location data pack** to server **every 10 seconds**. When the T-Box stop move or the car engine turn off, the GPS module will be turned off, and the T-Box will send **0x0506 heartbeat data pack** to sever **every 2 minutes**, the GPS location & car status information are not included in the heart beat data pack, the heart beat data pack is only used to keep the internet connected, the detail please refer to the TCP/IP communication protocol.
7. When using the Test Stand to test the T-Box, after turning the test stand ON switch to the "ON" position (Start car engine with car key, and the car key stays in the "ON" position), the T-Box will enter the driving status, the T-Box will upload the 0x0200 positioning pack every 10 seconds, after turning the test stand ON switch to the "OFF" position(Stop car engine with car key, and the car key stays in the "OFF" position), the T-Box will upload the 0x0506 heart beat pack every 2 minutes to keep the T-Box online.
8. Not all T-Box support all functions because of too many versions. Mostly the general version of the device use wiring control. It is recommended to test the wiring control and network control first. The OBD information reading and CAN BUS control can be tested after finding the proper model car. CAN BUS Reading and control need to upgrade the OBD firmware by special control program for the

different vehicle model, and the program can be upgraded online by internet, and the matching test needs to be done separately for the vehicle model that is not suitable. When the OBD cannot read the information, it only affects the mileage, fuel consumption, fuel consumption, recharge mileage and other information, and does not affect other information and network control.

Trouble Shooting

1. The device is not power on, please check the power supply, voltage, power wire fuse, etc.
2. The device can not connect the server, please check the following:

   A: SIM card balance / internet available / APN / internet user name / password.

   B: Device ID / IP / Port / Protocol.

   C: 2/3/4G & GPS antenna is well connected.

   D: The current place mobile phone network is well.

   E: Move the vehicle to open air to get well GPS signal.
3. Some time the device is off line.

   A: Check the 2/3/4G antenna connection, try to put 2/3/4G antenna to another place.

   B: SIM card balance.

   C: Try to check device current status by SMS.

   D: Confirm the offline area network signal.
4. The GPS antenna should face to sky.
5. The 2/3/4G antenna should keep away from big metal.
6. After go out the under ground park, some few tracking point maybe lost, the 2/3/4G and GPS module will take a few minutes to receive signal and re-locate, this is normal.
7. If can not get the car information from the OBD, please check the OBD software version is suit for the car model or not.

OBD CAN BUS Reading & Control

This T-Box has a dual CAN BUS bus interface, which can read the vehicle information on the OBD socket. The general public information of the standard is generally only the information of the engine. Vehicle status information such as cruising range, fuel consumption, total mileage, etc. are basically private protocol of different car manufacturers. The car status information that can be read by vehicles of different brands, models,

and years is different, so the reading of OBD information needs to be based on the brand Different models and generations match different program software. When the car model generations do not match, the testing for sample car can be done by us.

The CANBUS on the OBD of some vehicles can control door lock unlock / flashing lights / beep siren / trunk release etc. This T-Box device has a dual CAN BUS bus interface can control the special model vehicle, which need to be tested and confirm it is can be controlled or not by CAN BUS.

Note: Not all vehicles support external CANBUS device control vehicle. Some models do not accept the CANBUS to control the vehicle for security reason, this kind of the vehicle can only read some information through the CANBUS.